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ABSTRACT

A causal-comparative study was conducted among 56 educationally disadvantaged children to determine if children who had the benefit of a home-based experience were significantly different from their peers in intellectual ability, self-concept, and cognitive style. Using the cognitive-developmental method of instruction, trained para-professionals worked with children and parents in the home during the 1978-79 school year. The parents of participating children had the opportunity to attend weekly parent meetings where they constructed developmental toys and games. The weekly parent meetings were supplemented with developmental discussions presented by a parent educator. A control group did not participate in any similar experience. Upon enrollment in a pre-kindergarten, school-centered program, children in experimental and control groups were tested using The Stanford-Binet Intelligence Scale (S-B), The Preschool Self Concept Picture Test (PS-CPT), and The Kansas Reflection-Impulsivity Scale for Preschoolers (KRISP). Test and demographic data were analyzed using the nonparametric Mann-Whitney U-Test, Chi-Square Test, Spearman Rank Order Correlation, and The Kruskal-Wallis Test. Results indicated that children who experienced the home-based program had significantly higher intelligence scores. White children in the experimental group had significantly fewer errors in cognitive style than peers in the control group. (Author/RH)

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ABSTRACT

HOME-BASED EXPERIENCES AND THE SELF-CONCEPTS, COGNITIVE STYLES, AND INTELLIGENCE OF PRESCHOOL CHILDREN

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Home-based developmental programs with parent involvement have shown more promising, long-term educational gains than those reported in the initial investigations of Project Head Start and similar ESEA Title I programs. However, the research does not investigate the differences in children experiencing the home-based programs in comparison to children not having any similar experience.

A causal-comparative study was conducted to determine if children who had the benefit of the home-based experience were significantly different from their peers in intellectual ability, self-concept, and cognitive style. Using the cognitive-developmental method of instruction, trained para-professionals worked with children and parents in the home during the 1978-79 school year. The parents of participating children had the opportunity to attend weekly parent meetings where they constructed developmental toys and games. The construction of the toys and games was supplemented with developmental discussions presented by a parent educator. The control group did not participate in any similar experience.

The children selected for the study were educationally disadvantaged children living in Title I Target Area Schools of the School District of Lancaster, Pennsylvania. Upon enrollment in the pre-kindergarten program during the 1979-80 school year, children in both groups were tested using measures

of intellectual ability, self-concept, and cognitive style.

The statistical analysis of the data indicated that children who experienced the home-based program had significantly higher intelligence scores. The results of the statistical analysis of self-concept and cognitive style were not conclusive . Comparisons of the demographic data revealed one significant finding. White children who experienced the home-based program had significantly fewer errors in cognitive style than their peers who did not have any similar experience.

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has not been aware of her daddy's dream, her very existence has contributed to this achievement.

Finally, I wish to dedicate this manuscript to my handicapped nephew, Timmy. He is the reason I first pursued interest in this field.

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CHAPTER I

INTRODUCTION

It is the role of preschool education to better prepare children for their future educational experiences. The introduction of governmentally legislated educational programs for the disadvantaged began with Operation Head Start in 1964 and the Elementary and Secondary Education Act (ESEA) in 1965.[1] Having broad social goals, Operation Head Start was an attempt to stop the cycle of school failure in the disadvantaged family.[2] Primary emphasis was placed on developing a preschool program for children four and five years of age.[3] While Head Start children showed promising educational gains initially after participation, the gain did not endure into the primary grades.[4]

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[1]Gilbert Austin, Early Childhood Education: An International Perspective (New York: Academic Press, 1976), p. 5.

[2]Benjamin Bloom, Stability and Change in Human Characteristics (New York: John Wiley & Sons, 1964), pp. 212-19.

[3]Burton L. White, Barbara T. Kahan, and Jane S. Attanucci, The Origins of Human Competence (Lexington, Mass.: D. C. Heath and Co., 1979), p. 3.

[4]Westinghouse Learning Corporation, The Impact of Head Start: An Evaluation of the Effects of Head Start on Children's Cognitive and Affective Development (Columbus: Ohio University, 1969), p. 12.

As a result of the discouraging evidence surrounding the long-term gain of Head Start children, more interest was directed toward earlier intervention. Early intervention programs began to be explored in the early seventies in an effort to develop more lasting educational gains.[1] Additionally, federal assistance was provided for the investigation of the early development.[2]

Recognizing that the child's experience with his parents is the primary and most enduring influence on the child, a variety of home-based programs were developed and investigated.[3] These investigations have provided some encouraging results. The research indicated that children who have the home-based experience have significant and lasting educational gains.[4] However, the research does not show what was different about the child who had the home-based experience. This study attempted to identify criteria that distinguished children who had a home-based experience from their peers who had not had a similar experience.

Background for the Study

A similar home-based program for disadvantaged children is supported and operated by the School District of Lancaster,

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[1]Donald L. Peters, "Early Childhood Education: An Overview and Evaluation," in Psychological Processes in Early Education, ed. Harry L. Horn, Jr., and Paula A. Robinson (New York: Academic Press, 1977), p. 12.

[2]White, p. 3.

[3]Helen F. Robinson, Exploring Teaching in Early Childhood Education (Boston: Allyn & Bacon, Inc., 1977), p. 29.

[4]Peters, pp. 12-13.

Pennsylvania. Paraprofessionals have been trained to work with the parent and child in the home to enhance the child's development. There is also an opportunity for the parent to attend weekly workshops at a neighborhood school.

The program has been operating since 1969, but there is no evidence to indicate that the children involved are better prepared for the classroom experience. Subjective reports from parents and teachers are evidence that many positive experiences are happening with the parents and children. The question remains as to its benefit when the child is enrolled in the classroom experience.

Purpose of the Study

The purpose of this study was to identify those personality factors that distinguished children who had had the home-based experience in comparison with those children who had not had this experience. The criteria were in terms of intellectual development, self-concept, and cognitive style. Significant findings in these areas may give some indications as to why children with the home-based experience had more enduring gains than reported in the investigations of Operation Head Start.

Programs that take place in the home have unique qualities that cannot be duplicated in the school environment. While many parents of disadvantaged children were not themselves successful in school, they maintain that learning takes place only in school. The home setting indicates to the parent and child that home is a place for learning. Home-based

programs do not take the responsibility for educating the child away from the parent. The parent is recognized as the primary and most important teacher. Parent participation is sometimes difficult to find in school-centered programs. However, the home-based setting makes it almost impossible to avoid meeting the teacher and having some interaction with the child.

In home-based programs, the responsibility for the child's education is not removed from the parent. Active parent participation is an integral part of these programs. Additionally, the earlier intervention of home-based programs offers a more preventative approach to educating the disadvantaged child. Certainly, early intervention and parent involvement are two important aspects of home-based programs.

It can be theorized that increased parent involvement and earlier intervention may be the reason that home-based programs have been successful. However, the questions remain: What is different about the child who has had the home-based experience? Do children who experience home-based programs develop a higher regard for themselves and are they less impulsive in their approach to cognitive tasks?

Nature of the Study

A past perspective, causal-comparative study was conducted to compare children who have had the home-based experience with those children who had no earlier educational experience. The groups were compared for intellectual development, self-concept, and cognitive style.

The experimental group consisted of those children who had the home-based experience, and the control group consisted of those children who had not had any early educational experience. The two groups were compared for the three dependent variables upon enrollment in a pre-kindergarten, school-centered program.

Hypotheses for the Study

It was felt that children who had experienced the home-based program were better prepared for the school environment. The hypotheses attempted to investigate the effect of the home-based experience on intellectual development, self-concept, and cognitive style.

1. Children who had the home-based experience have higher intellectual development than their peers who had not had benefit of the early experience.

2. Children who had the home-based experience have more agreement between their self and ideal self than their peers who had not had the home-based experience.

3. Children who had the home-based experience are more reflective with fewer errors ir their cognitive style than their peers who had not had the benefit of the home-based experience.

Importance of the Study

It has been substantiated that children having the benefit of home-based programs have achieved substantial IQ gains which are still significant three to five years after

termination of the intervention.[1] However, the initial gains in Head Start do not endure into the primary grades.[2]

Many questions need to be investigated in an effort to explain this phenomenon. Is the child's experience or lack of experience before the Head Start age irreversible? Is Head Start a remedial program, and are we asking too much for the program to produce long-term gains? Have self-concept and cognitive style been set by the time a child reaches Head Start age? What is different about children who have the home-based experience?

This study attempted to investigate and compare intellectual development, self-concept, and cognitive style of children who have had a home-based experience with those who had not had any similar experience. If the theoretical hypothesis were significant and this study indicated that those children with the home-based experience had better intellectual development, more positive self-concept, and were more reflective with fewer errors in cognitive style, there would be implications for the direction of preschool education. Significant findings may indicate the need for organizational and curricular changes in early educational intervention. At the minimum, this would indicate a need for research on differences in children having the home-based experience. Significant findings would also give objective evidence that the School District

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[1]Phyllis Levenstein, "VIP Children Reach School: The Latest Chapter," paper presented at the Biennial Meeting of the Society for Research in Child Development, Denver, Colo., April 1975, p. 10.

[2]Westinghouse, p. 12.

of Lancaster's Home-Based Program is valuable in developing the skills to better prepare disadvantaged children for the classroom experience.

Assumptions for the Study

The following ideological assumptions considered the reasons why there have not been significant long-term gains for Head Start children:

1. When children reach Head Start age, typically in their fourth year, they have already formed the basic processes for interacting with their environment. These processes have begun to stabilize and are already difficult to change.

2. For the disadvantaged child, learning experiences at ages four and five are remedial and not preventive in nature. The processes that prepare a child for school are formed earlier and are more complex than the acquisition of school-like skills and knowledge.

3. For maximum effectiveness, a preventative educational experience must take place before the processes that retard the educational experiences are crystallized. The preventive program should be developmental in its approach to learning and be designed to enhance the child's self-concept.

4. A preventive educational program will be effective only if it includes the participation of the child's parents or primary caretaker.

The following methodological assumptions were formulated:

1. There was a low subject mortality rate in order to gain as powerful results as possible

2. Children in the control group were randomly selected

3. The purpose of the study was not revealed to the testers

4. The distinguishing aspects of the control and experimental groups was not revealed to the testers

5. The testers were trained to administer the tests with strict adherence to standard procedures

Limitations of the Study

1. The group having the home-based experience, or experimental, were not able to be randomly selected because they were already identified for attendance in the pre-kindergarten program. Randomization of the experimental group would have made the sample too small and perhaps weakened the results.

2. The sampling for both groups was limited to children residing in ESEA Title I Target Areas of the School District of Lancaster, Lancaster, Pennsylvania.

3. The experimental group was limited to those children participating in the home-based program during the 1978-79 academic year.

4. The investigation of both the experimental and control groups was limited to those children attending the pre-kindergarten, school-centered program for the 1979-80 academic year.

Summary

The evidence indicated that projects such as Head Start have not been able to show more than short-term gains in participating children. As a result of these discouraging reports, home-based programs were developed, emphasizing earlier intervention and parental involvement. Investigations of the home-based programs have reported more promising results with evidence of longer lasting intellectual gains.

However, the research has not investigated any differences in children as a result of their home-based experiences. This study investigated some possible differences by comparing children having a home-based experience with their peers who had no similar experience. The experimental hypotheses were that children having the home-based experience are intellectually superior, have a more positive self-concept, and are more reflective with fewer errors in their cognitive style.

CHAPTER II

REVIEW OF THE LITERATURE

Preschool education entered a new era with the enactment of Operation Head Start in 1964 and the passage of the Elementary and Secondary Education Act (ESEA) in 1965. Preschool enrollments have grown from 29.4 percent in 1966 to 49.2 percent in 1976.[1] Because of the works of Bloom and Hunt on the effects of early experience in human development, Head Start was identified as a step in breaking the cycle of poverty.[2] The professional advocates who supported the War on Poverty argued that disadvantaged children needed a head start that would allow them to enter school on an equal basis with middle-class children. School failure common to disadvantaged children would be considerably reduced or eliminated. They would achieve in school, stay in school longer, have better jobs and incomes, and thus improve their social and economic status in society.[3]

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[1]U.S., Department of Health, Education and Welfare, National Center for Education Statistics, Preprimary Enrollment of Children 3 to 5 Years Old: 1966 to 1976 (Washington, D.C.: Government Printing Office, 1978), p. 64.

[2]Bloom, pp. 213-18; and J. McVicker Hunt, Intelligence and Experience (New York: Ronald Press Co., 1961), pp. 212-19.

[3]Ruby Takanishi, "Federal Involvement in Early Education (1933-1973): The Need for Historical Perspectives," in Current Topics in Early Childhood Education, vol. 1, ed. Lilian G. Katz (Norwood, N.J.: Alex Publishing Corp., 1977), pp. 142-44.

The evaluation of ESEA Title I programs and Head Start did not fulfill the expectations of their enthusiastic supporters. One of the early evaluations of Head Start concluded that by the third grade, it was difficult to identify any children who still showed any benefit from the Head Start program. Similar findings were reported in ESEA Title I preschool programs.[1]

Generally, the studies indicated that the children involved in Head Start and ESEA Title I showed increases in general ability and achievement tests immediately after participation. However, no enduring effects could be traced into the primary grades.[2]

Discouraged by the above findings, the emphasis began to shift to home-based programs. Recognizing that parents are the first and primary influence on the child, a variety of home-based programs was developed in the early 1970s.[3] The evaluation of home-based programs has been much more encouraging. Children have achieved IQ gains which are still significant three to five years after termination of the intervention.[4]

Further evidence indicates that children enrolled in successful home-based programs make similar progress in other areas of development. They are more responsive to people. They show greater socioemotional maturity and have fewer school problems when they reach school age.[5]

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[1]Austin, p. 7. [2]Ibid. [3]Peters, p. 12.

[4]Ibid., p. 13. [5]Ibid.

Based on the hypotheses stated in Chapter I, this chapter was organized using the dependent variables of self-concept, cognitive style, and intelligence, respectively. The above sequence was used to easily describe the relationship among variables, specifically among self-concept, cognitive style, and intelligence. The following sections will describe the most relevant research related to the dependent variables and hypotheses of this study.

Self-Concept

The research has indicated that children with difficulty in school have a low self-regard. One of the basic tenets of logical learning theory is that children at an early age begin to organize, pattern, and structure various stimuli into what is more meaningful to them. These individuals relate to their environment in accordance with how they affectively feel about themselves.[1] Purkey stated: "Children come to school for the first time with a predisposition toward achievement or underachievement."[2] Because of the evidence supporting the relationship between children's academic achievement and self-concept, it was felt that a home-based experience may help to develop the self-concept that is necessary for a child to reach his or her potential in school achievement.

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[1]Gerald J. August and Joseph F. Rychlak, "Role of Intelligence and Task Difficulty in the Affective Learning Styles of Children with High and Low Self-Concepts," Journal of Educational Psychology, no. 3 (1978), p. 406.

[2]William Watson Purkey, Self-Concept and School Achievement (Englewood Cliffs, N.J.: Prentice-Hall, 1970), p. 2.

Before directing attention to the studies of self-concept, it is necessary to discuss the confusion sometimes encountered among the terms "self," "self-concept," and "self-esteem." The following definitions are given in an effort to differentiate among the three terms.

1. Self: When an individual is aware of being a separate entity, existing completely detached from objects within his environment; the self seems to be clearly established when the child uses the pronouns I, me, mine, or myself[1]

2. Self-Concept: The way an individual perceives himself and his behavior, and his opinion of how others view him[2]

3. Self-Esteem: The individual's satisfaction with the self-concept[3]

These three terms are sequenced developmentally. An individual must be conscious of his existence as a separate entity before he can obtain information about himself or develop a self-concept. Self is that consciousness that develops very early in life. Self-concept is the quality of the individual's social interactions and experiences. Self-esteem is the amount of success or failure accorded the

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[1]George Calhoun, Jr., and William C. Morse, "Self-Concept and Self-Esteem: Another Perspective," Psychology in the Schools 19 (July 1977):318.

[2]George Calhoun, Joann Kurfiss, and Polly Warren, "A Comparison of Self-Concept and Self-Esteem of Black and White Boys," The Clearing House 50 (November 1976):132.

[3]Ibid.

self-concept, which makes self-concept the logical developmental antecedent of self-esteem.[1]

Some experts believe that self-concept is developed before the age of five and remains somewhat constant throughout life. On the other hand, self-esteem is developed later and changes from time to time according to an individual's ability to keep his success and failure within the realm of his self-concept.[2]

So it seems, success and competency are necessary experiences for a young child to succeed in school. It is for this reason that it is believed that the home-based experience will have a positive impact on the development of a child's self-concept. Since self-concept develops early in life and is more constant, this study was limited to the investigation of self-concept.

Although many investigations have shown a significant relationship between academic achievement and self-concept, others have not found the same positive relationship. In a recent study of the relationship between self-concept and school achievement using social comparisons, the relationship of self-concept to school achievement was found to be significant.[3]

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[1]Calhoun and Morse, p. 320.

[2]Ibid., pp. 319-20.

[3]Carl M. Rogers, Monte D. Smith, and J. Michael Coleman, "Social Comparison in the Classroom: The Relationship Between Academic Achievement and Self-Concept," Journal of Educational Psychology, no. 1 (1978), p. 50.

Studies that have examined the relationship between self-concept and school achievement have not been able to agree on the findings. However, investigations that have not found a significant relationship have not controlled for the social function of the peer group. In a recent study by Rogers, Smith, and Coleman, the relationship between self-concept and school achievement was found to be significant. They maintained that the process in which an individual develops and has self-regard is critically dependent upon the social group in which the individual resides. While technically adequate, many similar studies are conceptually weak for not recognizing the importance of the social environment.[1]

Rogers, Smith, and Coleman further explained that the relationship between self-concept and academic achievement can only be understood within the context of a person's immediate social environment. The importance of academic achievement for self-concept is not within the absolute level of achievement, but in the child's perception of how his or her level of achievement compares with the achievement of those in his or her social comparison group. This study investigated the hypothesis that the relationship between academic achievement and self-concept is manifested within the context of specific social comparison groups. The study was completed using underachievers in a metropolitan elementary school. The Piers-Harris Children's Self-Concept Scale was used to assess self-concept with significant results.[2]

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[1]Ibid., pp. 50-56. [2]Ibid.

In a similar study, the relationship between self-concept and academic achievement was found to be significant. The subjects were underachieving elementary school children. Using the Piers-Harris Children's Self-Concept Test, performance was found to be significantly related to age, school grade, and achievement.[1]

In a study by Williams, the relationship between self-concept and reading achievement was not significant. The instrument used to assess self-concept was a verbal modification of the Coopersmith Self-Esteem Inventory. Achievement was measured using the reading achievement form of the California Achievement Test. The subjects were first-grade students. This study did not control for the social environment, and there is some reluctance to accept the results using the modified version of the Coopersmith Self-Esteem Inventory.[2]

In addition to the research, it is generally accepted that a child must have a positive self-regard to perform effectively in school. Many children have difficulty in school not because of low intelligence, poor eyesight, or poverty, but because they have learned to see themselves as incapable of handling academic work or see the work as irrelevant to their perceptual worlds. Closely held beliefs that a child has about himself are difficult to change unless

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[1]F. William Black, "Self-Concept as Related to Achievement and Age in Learning-Disabled Children," Child Development, no. 45 (1974), pp. 1137-40.

[2]Jean H. Williams, "The Relationship of Self-Concept and Reading Achievement in First Grade Children," Journal of Educational Research 66 (April 1973):378.

intervention is provided early in the child's life. If a child holds the self-concept that he is a worthy person, he will strive to maintain that awareness. In contrast, if the child's self-concept is poor, he will strive to maintain his poor regard for himself. There is reason to believe that children who orient their learning in a negative direction develop abnormal learning patterns. Learning how not to learn can occur for a child with a poor self-concept.[1] Many times, what is interpreted as laziness or stubbornness in the learning situation is misunderstanding. In a study of the learning styles of high- and low-concept children, it was found that low self-concept children learned less-liked tasks first which was the opposite of high-concept children.[2] It seems that low-concept children prefer to struggle with the negative items and fulfill their expectations that they will fail. School and academic achievement will be meaningful only if the experience is in keeping with the child's self-concept. For this reason, it is hypothesized that early intervention will provide the child with a sense of worthiness and high regard for himself.[3]

Cognitive Style

The cognitive style of children with the home-based experience is being investigated, because of its relationship

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[1]Joseph F. Rychlak, The Psychology of Rigorous Humanism (New York: Wiley-Interscience, 1977), p. 328.

[2]August and Rychlak, pp. 406-12.

[3]Purkey, pp. 39-41.

with how the child interacts with his or her environment. Cognitive style, as described by Kagan, is the tendency to be reflective or impulsive in approaching a cognitive task. The child who is likely to respond impulsively in difficult problem situations is more likely to give an incorrect response than the child who reflects upon several possible solutions before responding. The impulsive child places greater value on an immediate success than he does on avoiding failure. The reflective child demonstrates greater persistence with intellectual tasks. He also chooses more difficult tasks and works on them for longer periods of time.

The decision time variable, or latency in response, has been called reflectivity-impulsivity, or popularly cognitive style.[1] Kagan described reflectivity-impulsivity:

> Succinctly stated, the reflection-impulsivity dimension describes the child's consistent tendency to display slow or fast response times in problem situations with high response uncertainty. The results are persuasive in suggesting that a tendency for reflection increases with age, is stable over periods as long as 20 months, manifests pervasive generality across varied task situations, and is linked to some fundamental aspects of the child's personality organization.[2]

Kagan used the Matching Familiar Figures Test (MFF) and the Haptic Visual Matching Test (HVM) to investigate

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[1]Jerome Kagan and Nathan Kogan, "Individual Variation in Cognitive Processes," in Carmichael's Manual of Child Psychology, ed. Paul H. Mussen (New York: John Wiley & Sons, Inc., 1970), p. 1275.

[2]Jerome Kagan, "Impulsive and Reflective Children: Significance of Conceptual Tempo," in Learning and the Educational Process, ed. John D. Krumboltz (Chicago: Rand McNally & Co., 1965), p. 134.

reflectivity-impulsivity. The two tasks were administered to children in first through third grades. The results described by Kagan indicated "a clear trend for decreasing errors and increasing response latencies with age."[1] The difference in response time between grade one and grade three was highly significant ($p < .01$). The MFF and HVM had a high negative correlation between response time and errors.[2]

The evidence seemed to indicate that the reflective child would function more successfully than the impulsive child in most school settings. In a study of the relationship between reflectivity and impulsivity and academic achievement, it was found that fourth grade children identified as reflective based on the MFF, scored significantly higher on Comprehensive Tests of Basic Skills Achievement Battery than those classified as impulsive.[3] Moreover, a study of kindergarten children using the MFF revealed a significant relationship between cognitive style and conservation as described by Piaget.[4] The more reflective children demonstrated conservation abilities.

In most school settings, there is a tendency for teachers and peers to react negatively to incorrect answers.

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[1]Ibid., p. 136.

[2]Ibid., pp. 135-36.

[3]David E. Barrett, "Reflection-Impulsivity as a Predictor of Children's Academic Achievement," Child Development, no. 48 (1977), pp. 1443-47.

[4]Celia S. Lavatelli, Piaget's Theory Applied to an Early Childhood Curriculum (Boston: Center for Media Development, Inc., 1970), p. 45.

If the impulsive child receives sarcasm, laughter, or rejection for incorrect answers, he will likely choose to stop responding in the class. When the child chooses not to interact, he feels thwarted by the educational process. Kagan believed that the child must react to two opposing standards when approaching a difficult problem or question. One standard demands, "Get the answer quickly." The second standard demands, "Do not make a mistake." It is no wonder schools view the child who is quick and correct as highly intelligent. Certainly, the quick and correct child will succeed in school.[1]

Schools are where educational success and failure are first met by most children. Cognitive style may play an important role, along with many other cognitive processes in determining a child's success or failure in school. If children were born with their cognitive pattern set, there would be no need to investigate its implications. However, there is evidence to indicate that cognitive style can be changed. A study of preschoolers using the Kansas Reflection-Impulsivity Scale for Preschoolers (KRISP) indicated that reflectivity increases with age.[2]

Further evidence was documented in a study of kindergarten children and second grade children using the MFF. The results of this study indicated that children could learn to

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[1]Kagan, pp. 154-60.

[2]Thomas M. Achenbach and John R. Weisz, "Impulsivity-Reflectivity and Cognitive Development in Preschoolers: A Longitudinal Analysis of Developmental and Trait Variance," Developmental Psychology 11 (May 1975):413-14.

modify information according to the situational demands.[1] Moreover, in a study where teacher cognitive style was observed, it was found that children changed their cognitive style in the direction of the teacher. Teachers were given the adult version of the MFF and grouped according to reflective or impulsive qualities. A random sample of children was given the test at the beginning and end of the school year. It was found that the children changed in the direction of their teacher's cognitive style.[2]

The above evidence suggested that children will model the cognitive style of their parents. An impulsive parent or teacher may move the child in a direction consonant with their cognitive style. In keeping with the hypotheses of the study, it seemed that cognitive style could be changed with the intervention of a home-based program during the preschool years.

In addition to Kagan's investigation of impulsivity-reflectivity, he found some interesting information regarding self-concept. Fourth and fifth grade children were asked to rate themselves on their intellectual ability in respect to their classmates. In the below-average ability group, reflective children regarded themselves as more capable than impulsive children. In the above-average group, the impulsive

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[1]Susan Weiss Barstis and LeRoy H. Ford, Jr., "Reflection-Impulsivity, Conservation, and the Development of Ability to Control Cognitive Tempo," Child Development, no. 48 (1977), pp. 953-59.

[2]R. M. Yando and J. Kagan, "The Effect of Teacher Tempo on the Child," Child Development, no. 39 (1968), p. 1313.

children regarded themselves as more capable than the reflective children. It appeared that the impulsive, below-average ability child has a poorer self-concept. Perhaps this is a result of his negative experience as outlined earlier in this Chapter when discussing how teachers and peers react to incorrect answers.[1]

Self-concept appears to have a relationship to cognitive style and has been developed as a hypothesis of this study.

Intelligence

An investigation of this nature would not be complete without having standardized data to compare the information between groups as well as with a more widely normed population. Additionally, the intelligence quotient (IQ) has been the best predictor of school performance. Since the purpose of home-based programs is to better prepare children for school, it will be valuable to assess their intellectual functioning.[2]

Intelligence scales have been widely used in evaluating preschool programs. The initial evaluation of Head Start children used intelligence gains as the method of assessing the success of the program.[1] More recent evaluations of

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[1]Kagan, pp. 159-60.

[2]Edvard Zigler and Penelope K. Trickett, "IQ, Social Competence, and Evaluation of Early Childhood Intervention Programs," American Psychologist 33 (September 1978):789.

[3]Uric Bronferbrenner, Is Early Intervention Effective? (Washington, D.C.: Office of Child Development, 1974), p. 6.

home-based programs used intelligence gains to evaluate the effects of the home-based experience.[1]

As a result of the disappointment in the fading out of intelligence gains in the primary grades, early intervention advocates indicated that intelligence gain was not the most important benefit of early intervention. However, the literature revealed much disagreement as to what should be measured or evaluated.[2]

In an effort to establish accountability, the government chooses to monitor programs to see that early intervention programs deliver mandated services. Certainly, this is important to account for the taxpayers' dollars and it does see that the programs are doing what they are mandated to do, but the question remains: Is what they are doing most appropriate to the needs of the children?

McClelland believed intelligence tests are valid for predicting success in school because success in school depends on taking similar-type tests.[3] He continued that intelligence tests are clearly discriminating against those who have not been exposed to the culture. McClelland stated:

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[1]Levenstein, p. 10.

[2]Benjamin D. Stickey, "The Fading Out of Gains in 'Successful' Compensatory Education Programs," Urban Education 12 (October 1977):271-81.

[3]David C. McClelland, "Testing for Competence Rather than for 'Intelligence,'" American Psychologist, January 1973, pp. 1-13.

> It seems wiser to abandon the search for pure ability factors and to select tests instead that are valid in the sense that scores of them change as the person grows in experience, wisdom, and ability to perform effectively on various tasks that life presents to him.[1]

A more recent study by Zigler and Trickett indicated that early intervention programs should use a measure of social competence instead of IQ.[2] It is their feeling that IQ changes resulting from preschool intervention programs reflect motivational and/or personality variables that influence the children's test performance rather than changes in cognitive functioning. The quality and nature of formal cognitive functioning assessed by the IQ test is only one of many factors that determine the quality and character of human functioning. In describing what IQ tests measure, Zigler and Trickett wrote:

> First, it does measure a collection of formal cognitive processes such as abstracting ability, reasoning, speed of visual information processing, and all those other formal cognitive processes that appear and reappear with regularity in factor analytic studies of human intelligence test performance. Second, in keeping with the well-known process-content distinction, the standard intelligence test is also an achievement test highly influenced by the child's particular experiences, which determine whether particular knowledge is held by the child, without which he or she cannot pass the item in question.[3]

In discussing the popularity of the intelligence test, Zigler and Trickett stated:

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[1] Ibid., p. 8.

[2] Zigler and Trickett, p. 792.

[3] Ibid.

> What then recommends the use of the IQ as a measure in the outcome evaluation of childhood intervention programs? There are several reasons why it became so popular. First, the standard IQ tests are well-developed instruments; the psychometric properties of which are so well documented as to allow the user to avoid difficult measurement problems. Second, the ease of administration adds to the attractiveness of such a measure. This attractiveness is enhanced further if one decides to employ the Peabody Picture-Vocabulary Test, the Ammons Full Range Vocabulary Test, or the Otis-Lennon Mental Ability Test, justifying this decision on the basis of the relatively high correlations found between such 10-minute tests and the longer Stanford-Binet Intelligence Scale or the Wechsler Intelligence Scale for Children. Third, no other measure has been found to be related to so many other behaviors of theoretical and practical significance.[1]

As an alternative, Zigler and Trickett believed that preschool programs should be evaluated using a measure of social competence. Zigler and Trickett disagreed with McClelland's inference that IQ and competence are minimally related, but argued that IQ is a relatively imperfect measure of social competence. Social competence is defined by Zigler and Trickett as, first, reflecting the success of the human being in meeting societal expectancies and, second, reflecting self-actualization or personal development. They believed that a good social competence measure should assess the child's physical health and well-being, formal cognitive ability, achievement, and motivational and emotional variables.[2]

To date, a social-competence scale is nonexistent, and criterion-referenced behavioral checklists have not been

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[1] Ibid., p. 790. [2] Ibid., pp. 793-97.

found to be useful in broad program comparisons in which inferences can be made about the effectiveness of early intervention programs. Although we must be aware of the shortcomings of intelligence testing, its appropriateness for a study such as this cannot be overlooked. It is for this reason that it is believed that an intelligence scale will provide useful information in comparing children who have the home-based experience with those who have not had similar experiences.

Measures of intelligence or cognitive functioning have been used almost universally in evaluating early intervention programs. The most recent studies have made use of similar measures.

In a study of high-risk disadvantaged preschool children, the Stanford-Binet Intelligence Scale was used as a pre- and post-test to evaluate a remediation and enrichment program. Significant results were reported.[1]

Another study using the Stanford-Binet Intelligence Scale comparing middle-class children with disadvantaged children utilized an item analysis made of pre- and post-tests. It was concluded that lower class subjects were equivalent to their middle-class peers but developed at a slower rate.[2]

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[1]James J. Morris and Salvatore Clarizio, "Improvement in IQ of High-Risk, Disadvantaged Preschool Children Enrolled in a Developmental Program," Psychological Reports, no. 41 (1977), pp. 1111-14.

[2]David Goldstein, William J. Meyer, and Byron Egeland, "Cognitive Performance and Competence Characteristics of Lower- and Middle-Class Preschool Children," Journal of Genetic Psychology, no. 132 (1978), pp. 178-83.

The above cited investigations included programs that removed the child from the home; studies of Head Start showed that significant educational gains did not endure into the primary grades. The following studies reviewed some home-based programs using intelligence measures for evaluation.

In a longitudinal study of children's early home environments, the Bayley Scales of Infant Development (BSFD) were used as a pre-test; the Stanford-Binet Intelligence Scales were used as a post-test. The results indicated that early home environment may contribute to instability in performance on infant tests.[1]

In another investigation of inner-city toddlers, the BSFD was used as a pre- and post-test with significant results.[2]

The literature reflected the wide use of intelligence measures for investigation of early intervention programs. It is believed that the use of intelligence measures can be useful if the results are interpreted in the strict sense that they are intended to be used.

Summary of the Literature Review

There have been many investigations of intelligence, self-concept, and cognitive style in preschool children.

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[1]Robert H. Bradley and Bettye M. Caldwell, "Early Home Environment and Changes in Mental Test Performance in Children from 6 to 36 Months," Developmental Psychology 12 (March 1976):93-97.

[2]Leonard Jason and Cheryl Kimbrough, "A Preventive Educational Program for Young Economically Disadvantaged Children," Journal of Community Psychology 2 (April 1974): 134-39.

However, none of the studies have compared these personality traits of children having a home-based experience with those who have not had similar experiences. Nonetheless, the evidence seemed to indicate that the above variables are related to school success. In addition, it appeared that the variables of self-concept, cognitive style, and intelligence may be modified in a positive direction during the preschool years. Thus, the intervention of a home-based program may increase the probability of school success.

Many of the studies reviewed used measures of intellectual assessment as the primary method of evaluation. The literature review documented that home-based programs have improved intellectual development that has endured into the primary grades. However, the literature did not report why children having the home-based experience are different from their peers without a similar experience. A discussion of the findings in Chapter V will describe the relationship of the home-based experience to the personality traits of self-concept, cognitive style, and intelligence.

CHAPTER III

METHODOLOGY

A causal-comparative study was conducted to determine if there is a significant difference in disadvantaged children who have had a home-based experience. Two groups of children were compared for intelligence, self-concept, and cognitive style. Group I, or the experimental group, had the home-based experience during the preceding school year. Group II, or the control group, did not have any similar experience. Both groups were tested upon enrollment in a pre-kindergarten class. A comparison was made to see if the home-based children had significantly more intellectual ability, had more regard for themselves in self-concept agreement scores, and were more reflective with fewer errors in their cognitive style.

Description of Subjects

The home-based program and pre-kindergarten program are supported and operated by the School District of Lancaster, Pennsylvania, under the Department of Preschool Services. This urban school district of nearly 11,000 students has sixteen elementary schools, four junior high schools, and one high school. Most of the children participating in the preschool program live in the southeast quadrant of the City of Lancaster. Generally, these children come from homes of lower socioeconomic backgrounds. On September 5, 1979, 94 children were enrolled

in the home-based program and 190 children were enrolled in the pre-kindergarten. Thirty-eight percent of the children enrolled in the home-based program were non-white. The non-white children consisted of 58 percent Hispanic, 33 percent black, and 8 percent Vietnamese. Fifty-nine percent of the children enrolled in the pre-kindergarten program were non-white. The non-white children consisted of 59 percent Hispanic, 38 percent black, and 3 percent Vietnamese.

The children available for this study were those students who attended the pre-kindergarten program for the 1979-80 school year. Two groups of children were selected for the study. The experimental group consisted of all the children who were enrolled in the home-based program during the preceding school year and attended the pre-kindergarten program for the 1979-80 school year. The control group consisted of randomly selected children who had no home-based experience prior to attending the pre-kindergarten program.

The subjects who had the home-based experience were seen in the home for two hours a week during the 1978-79 school year. The teachers were trained paraprofessionals using the cognitive-developmental model of programming.

The cognitive-developmental model is based upon the premise that cognitive and affective behavior are natural processes of interaction between the child and the environment. The child's manner of interacting with his or her environment will be qualitatively different at different developmental stages.[1]

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[1]Peters, p. 5.

The children who had the home-based experience comprised a much smaller sample than the children who did not have this experience. In order to keep the sample large enough to obtain significant results, all children with the home-based experience were compared with a randomly selected group of similar size who did not have any earlier preschool experience.

Fifty-six children were selected for the study. Twenty-eight of them experienced the home-based developmental program, and twenty-eight did not have any similar experience. Four children from the original groups did not complete the study. Two children from Group I, the group that experienced the home-based developmental program, moved out of the school district. Two children from Group II, those who did not have the home-based experience, were considered untestable. All of the remaining children were tested between September 20 and October 11, 1979.

Procedures for the Study

Upon enrollment in the home-based program, each child was given the Denver Developmental Screening Test (DDST) to assess his or her developmental strengths and weaknesses. The teacher worked with the child on his or her developmental level, regardless of the child's chronological age. A developmental profile was updated to follow the child's progress.

The parents of the home-based child had the opportunity to attend weekly parent meetings at a neighborhood school. The

meetings were facilitated by a parent educator. The parent educator was a professional who prepared discussion topics on how children develop. The parents also had the opportunity to make games and toys that were specifically designed to enhance their child's developmental skills.[1]

During the 1979-80 school year, children in the experimental group and control group were enrolled in the pre-kindergarten program. Upon enrollment, each child from both groups was tested using measures assessing intelligence, self-concept, and cognitive style. The tests were administered by a teacher and school psychologist trained in the standard procedures outlined for each test.

Testable Hypotheses

The study addressed the following null research hypotheses:

H_1. There are no significant differences in the intellectual development between subjects who experienced the home-based program and those who did not have any similar experience.

H_2. There are no significant differences in the self-concept between subjects who experienced the home-based program and those who did not have any similar experience.

H_3. There are no significant differences in the cognitive style between subjects who experienced the home-based program and those who did not have any similar experience.

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[1]School District of Lancaster, A Parenting Skills Program: The Preschool Years (Harrisburg: Pennsylvania Department of Education, 1976), p. 1.

H_4. There will be no significant correlation between cognitive style latency and error scores for those children who had the home-based experience.

H_5. There will be no significant correlation between cognitive style latency and error scores for those children who did not have the home-based experience.

H_6. There will be no significant differences in the cognitive style latency scores between subjects who experienced the home-based developmental program and those who did not have any similar experience.

H_7. There will be no significant difference in the cognitive style error scores between subjects who experienced the home-based program and those who did not have any similar experience.

Instrumentation

Three separate measures were given to assess each area as outlined in the hypotheses. The following describes the appropriateness, reliability, and validity of each instrument.

The Stanford-Binet Intelligence Scale (S-B) was used to assess intellectual level. The S-B is a widely accepted instrument for assessing the intellectual levels of children and adults.

The Preschool Self-Concept Picture Test (PS-CPT) was used to assess self-concept. The PS-CPT was developed as a non-verbal, picture-type measure. Content validity was achieved by asking children to describe the pictures. These

descriptions agreed with what the test designer intended the pictures to represent. A correlation calculated between the PS-CPT and the Draw-a-Man Self-Concept Test approached significance. Coefficients of stability calculated for the self- and ideal self-measures were, respectively, $r = .94$ and $r = .80$. The PS-CPT is considered a research instrument.[1]

The Kansas Reflection-Impulsivity Scale for Preschoolers (KRISP) was used to assess cognitive style. The test was designed to identify young children who were reflective or impulsive in their cognitive style. Interform reliability ranged from .61 to .80 using children two years ten months to six years eight months. While there was no practice effect for time scores, a significant practice effect was noted for the error score. The KRISP is considered a research instrument.[2]

Data Analysis

A nonparametric, Mann-Whitney U-test was used for the statistical analysis of Hypotheses 1, 2, 6, and 7. Hypothesis 3 was tested through the use of the nonparametric Chi-Square. Hypotheses 4 and 5 were tested using the nonparametric Spearman Rank Order Correlation. The results of each group were compared for significance in the areas of intelligence, self-concept, and cognitive style. Demographic data were

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[1]Orval G. Johnson, Tests and Measurements in Child Development, 2 vols. (Washington, D.C.: Jossey-Bass Publishers, 1976), pp. 107-08.

[2]Ibid., pp. 350-51.

collected on each group and descriptively compared. Trends in the demographic data were statistically compared using the nonparametric Kruskal-Wallis Test and Mann-Whitney U-test.

Summary of Methodology

A causal-comparative study was conducted to determine if children who had the home-based experience were significantly different from their peers in intellectual ability, self-concept, and cognitive style. The children having the home-based experience were instructed in the home by a trained paraprofessional during the preceding school year. The trained paraprofessional used the cognitive-developmental model of programming and monitored the children's developmental progress.

The parents of the children had the opportunity to attend weekly parent meetings where they constructed developmental toys and games and participated in discussions on child development. The control group did not participate in any similar experience.

The children from the experimental group and control group were educationally disadvantaged children living in Title I Target Area Schools. Typically, these children came from minority families with low socioeconomic backgrounds.

Upon enrollment in the pre-kindergarten program during the following year, children in the experimental group and control group were tested using measures of intellectual ability, self-concept, and cognitive style. The data collected from the tests and the demographic data collected upon

enrollment were analyzed using the nonparametric Mann-Whitney U-test, Chi-Square Test, Spearman Rank Order Correlation, and the Kruskal-Wallis Test.

CHAPTER IV

ANALYSIS OF DATA

The purpose of this study was to identify those factors which distinguish children who have had the home-based program from those children who have not had any similar experience. The dependent variables used to determine the difference in the two groups of children were intellectual development, self-concpet, and cognitive style. Raw data for the dependent variables is shown in Appendices A and B.

This chapter is organized into seven subsections. Sections 1 through 5 statistically compared the two groups on intellectual development, self-concept, and cognitive style. Section 6 descriptively compared the demographic data collected on each child. The final section of this chapter summarized the analysis of the data. The overall intent of this chapter was to accept or reject the research hypothesis and identify those areas in the demographic data that need further analysis. The findings of this chapter will be discussed further in Chapter V.

Comparison of the Groups on Intellectual Development

The Stanford-Binet Intelligence Scale, Form L-M, was administered to each child using the third revision manual. The chronological age (CA) and mental age (MA) were converted

to IQ scores using the 1972 Revised IQ tables. Each child was tested by a certified school psychologist with experience in testing young children with the Stanford-Binet Intelligence Scale. An interpreter was used for those children who spoke Spanish. The Mann-Whitney U-test was used to compare the IQ scores of the two groups. Because the N for each group was greater than 20, the observed U of 224.5 was converted to an observed Z of -2.07 $P(z \leq -2.07)$. The observed Z of -2.07 was significant at the .05 level. Therefore, the experimental hypothesis was accepted. The children who experienced the home-based developmental program had higher intelligence scores than children who did not have any similar experience. A description of the IQ scores and ranks is shown in Appendix C.

Comparison of the Groups on Self-Concept

The Preschool Self-Concept Picture Test (PS-CPT) was administered to each child by a teacher having a background in psychology and trained in the standard procedures for administering the PS-CPT. The PS-CPT responses were recorded as "agree" or "disagree" with the child's ideal self. These scores were converted to a congruence score indicating the amount of agreement the children had between their self-concept and ideal self-concept. This procedure was consistent with the procedure used in the validity and reliability study of the PS-CPT.[1] The Mann-Whitney U-test was used to compare the PS-CPT congruence scores of the two groups. Because the N for

[1]Rosestelle B. Woolner, Preschool Self-Concept Picture Test: Descriptive Data and Instructions (Memphis: n.p., 1966), p. 12.

each group was greater than 20, the observed U of 339.5 was converted to an observed Z of .027 P($z \leq .027$). Since the observed Z of .027 was not equal to or greater than the critical Z of ± 1.96, there was insufficient evidence to reject the null hypothesis. This difference was insignificant, indicating that there were no distinguishable differences in PS-CPT congruence scores for the two groups. A description of the PS-CPT congruence scores and ranks is shown in Appendix D.

Comparison of the Groups on Cognitive Style

The Kansas Reflection-Impulsivity Scale for Preschoolers (KRISP), Form A, was administered to each child by a teacher having a background in psychology and trained in the standard procedures for administering the KRISP. The KRISP responses were recorded as latency and errors. The latency score indicated the amount of time the child reflected on each problem and the error score indicated the number of incorrect responses for each problem.

The latency and error scores were tallied for each child indicating the total amount of time each child reflected upon the problem before responding and the total number of errors recorded as incorrect responses to the problem. A median split was used to determine how many children fell into the following categories: Impulsive-High Errors (I-HE), Impulsive-Low Errors (I-LE), Reflective-High Errors (R-HE), and Reflective-Low Errors (R-LE). The use of the median split was consistent with Kagan's method for defining impulsive and

reflective children.[1] A description of the median split is shown in Appendix E.

The Chi-Square Test was used to compare the cognitive style of the two groups. Additionally, a Yates Correction was used in the computation because the expected values were less than ten. Since the calculated χ^2 of the 1.45 was less than the critical χ^2 of 7.82, there was insufficient evidence to reject the null hypothesis at the .05 level of significance $P(\chi^2, df\ 3 = 1.45) < .05$. Therefore, the experimental hypothesis that children who experienced the home-based program were more reflective with fewer errors in their cognitive style was not supported by these data. A description of the cognitive style categories is shown in Appendix F.

Correlation of Cognitive Style for Group I

In an effort to replicate earlier studies with the KRISP and see if a correlation existed between the latency and error scores for Group I, the scores were correlated using the Spearman Rank Order Correlation (R_s).[2] Since the observed R_s of .087 was not greater than or equal to the critical R_s of .391, there was insufficient evidence to reject the null hypothesis at the .05 level of significance. Therefore, the experimental hypothesis that there was a correlation between the latency and error scores of children who have had the

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[1] Kagan, p. 148.

[2] John C. Wright, The KRISP: A Normative Evaluation, published for The Kansas Center for Research in Early Childhood Education, Department of Human Development (Lawrence: University of Kansas, 1978), pp. 8-17.

home-based program experience was not supported by these data A description of the latency, errors, and ranks for Group I is shown in Appendix G.

Correlation of Cognitive Style for Group II

In an effort to further replicate earlier studies with the KRISP and see if a correlation existed between the latency and error scores for Group II, the scores were correlated using the Spearman Rank Order Correlation (R_s).[1] Since the observed R_s of .044 was not greater than or equal to the critical R_s of .391, there was insufficient evidence to reject the null at the .05 level of significance. Therefore, the experimental hypothesis that there was a correlation between the latency and error scores of children who did not have the home-based program experience was not supported by these data. A description of the latency, errors, and ranks for Group II is shown in Appendix H.

Comparison of Cognitive Style Latency Scores

In an effort to determine if there was a difference in the cognitive style latency scores of children who had experienced the home-based program and those who did not have any similar experience, a Mann-Whitney U-test was used to test for significance. Because the N for each group was greater than 20, the observed U of 356 was converted to an observed Z of .329. Since the observed Z of .329 was less than the

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[1] Ibid.

critical Z of 1.96, there was insufficient evidence to reject the null hypothesis at the .05 level of significance. The finding was not significant, indicating that there were no distinguishable differences in cognitive style latency scores for the two groups. A description of the latency scores and ranks is shown in Appendix I.

Comparison of Cognitive Style Error Scores

In an effort to determine if there was a difference in the cognitive style error scores of children who had experienced the home-based developmental program and those who did not have any similar experience, a Mann-Whitney U-test was used to test for significance. Because the N for each group was greater than 20, the observed U of 378.5 was converted to an observed Z of .741. Since the observed Z of .741 was less than the critical Z of 1.96, there was insufficient evidence to reject the null hypothesis at the .05 level of significance. The result was not significant, indicating that there were no distinguishable differences in the cognitive style error scores for the two groups. A description of the error scores and ranks is shown in Appendix J.

Descriptive Analysis of Demographic Data

Interrelationships among demographic data were selected for further analysis. Mean scores on the dependent variables of intelligence, self-concept, and cognitive style were compared with the sex, race, and parent education of the children. In the case of cognitive style, the comparison was

made for both latency and error scores. Further analysis was completed for those scores that differed by a large enough margin to indicate the need to test for significance. A description of the dependent variable comparisons for demographic data is shown in Table 1.

Groups I and II mean scores were compared on each dependent variable for sex of the children. In Group I, the experimental group, males had a slightly higher mean IQ than females. In Group II, the control group, the females had 4.9 points higher mean IQ than the males.

A comparison of self-concept congruence score means for sex of the child indicated that Group I males had a slightly higher mean self-concept congruence score than females, while in Group II, females had 1.6 points higher mean self-concept congruence scores than the males. The mean scores for self-concept congruence scores were relatively close for males and females in both groups.

A comparison of cognitive style means for sex of the child indicated that Group I male children were impulsive with high errors and female children were reflective with high errors as defined by the median split. The median split for Group II children indicated that male children were reflective with low errors and female children were reflective with high errors. It was noted that the cognitive style mean scores for male and female children were relatively close in both groups.

Groups I and II mean scores were compared on each dependent variable for race of the child. Black, Hispanic, and white children were identified as taking part in the study.

TABLE 1

DEPENDENT VARIABLE COMPARISONS
FOR DEMOGRAPHIC DATA

	Group One			Group Two		
	Total	N	$\bar{X}$	Total	N	$\bar{X}$
IQ scores for females	1064	12	88.7	1511	18	83.9
IQ scores for males	1247	14	89.1	636	8	79.5
IQ scores for Black Children	478	5	95.6	687	8	85.9
IQ scores for Hispanic Children	1066	13	82	715	9	79.4
IQ scores for White Children	767	8	95.9	745	9	82.8
IQ score with father having 12+ education	470	5	94	584	7	83.4
IQ score with mother having 12+ education	476	5	95.2	243	3	81
IQ score with father having -12 education	1140	13	87.7	866	10	86.6
IQ score with mother having -12 education	1595	18	88.6	1642	20	82.1
IQ score with both parents having 12+ education	94	1			0	
IQ score with both parents having -12 education	958	11	87.1	693	8	86.6
PS-CPT scores for females	63	12	5.3	110	18	6.1
PS-CPT scores for males	83	14	5.9	36	8	4.5
PS-CPT scores for Black Children	22	5	4.4	35	8	4.4
PS-CPT scores for Hispanic Children	80	13	6.2	61	9	6.8
PS-CPT scores for White Children	44	8	5.5	50	9	5.6
PS-CPT score with father having 12+ education	30	5	6	35	7	5
PS-CPT score with mother having 12+ education	37	5	7.4	19	3	6.3
PS-CPT score with father having -12 education	67	13	5.2	54	10	5.4
PS-CPT score with mother having -12 education	94	18	5.2	108	20	5.4
PS-CPT with both parents having 12+ education	10	1			0	
PS-CPT with both parents having -12 education	52	11	4.7	46	8	5.8
KRISP latency for females	553.6	12	46.1	803.6	18	44.6
KRISP latency for males	535.3	14	38.2	333.4	8	41.7
KRISP errors for females	137	12	11.4	229	18	12.7
KRISP errors for males	153	14	10.9	78	8	9.8
KRISP latency for Black Children	230.5	5	46.1	328.6	8	41.1
KRISP latency for Hispanic Children	513	13	39.5	396.4	9	44.0
KRISP latency for White Children	345.4	8	43.2	412	9	45.8
KRISP errors for Black Children	55	5	11	82	8	10.3
KRISP errors for Hispanic Children	177	13	13.6	96	9	10.7
KRISP errors for White Children	58	8	7.3	129	9	14.3
KRISP latency with father 12+ education	235	5	47	258.4	7	36.9
KRISP latency with mother 12+ education	267.5	5	53.5	113.1	3	37.7
KRISP latency with father -12 education	496.9	13	38.2	454.2	10	45.4
KRISP latency with mother -12 education	688.8	18	38.3	855	20	42.8
KRISP latency with both parents 12+ education	68	1			0	
KRISP latency with both parents -12 education	404.9	11	36.8	397.6	8	49.7
KRISP errors with father 12+ education	54	5	10.8	88	7	12.6
KRISP errors with mother 12+ education	51	5	10.2	45	3	15.0
KRISP errors with father -12 education	163	13	12.5	125	10	12.5
KRISP errors with mother -12 education	198	18	11.0	234	20	11.7
KRISP errors with both parents 12+ education	10	1			0	
KRISP errors with both parents -12 education	129	11	11.7	97	8	12.1

In Group I, the white children's mean IQ was highest, with the mean for black children and Hispanic being .3 and 13.9 points lower, respectively. In Group II, the black children's mean IQ was highest with the mean for Hispanic and white children being 6.5 and 3.1 points lower, respectively. The Hispanic children had the lowest mean score for both groups.

A comparison of self-concept congruence mean scores for race of the child indicated that in both groups, Hispanic children had the highest mean self-concept congruence scores, and black children had the lowest mean self-concept congruence scores.

A comparison of cognitive style mean scores for race of the child indicated that in Group I, black children were reflective with high errors, Hispanic children were reflective with high errors, and white children were reflective with low errors. The Group II means for cognitive style indicated that black children were reflective with low errors, Hispanic children were reflective with high errors, and white children were reflective with high errors. It was noted that the cognitive style scores were very similar for both groups, except the mean errors for white children in Group II were 7 points higher than the mean errors for white children in Group I.

Groups I and II mean scores were compared with each dependent variable for education of the child's parents. Parents were identified as having twelve years or more education and below twelve years education. Group I children with mothers having twelve or more years education had the

highest mean IQ score of 95.2. Group II children with fathers having less than twelve years education had the highest mean IQ score of 86.6 for that group. The lowest mean IQ score for Group I was 87.7 for children of fathers having less than twelve years education. The lowest mean IQ score for Group II was 81 for children of mothers having twelve or more years education. The mean IQ score for children in Group I with both parents having less than twelve years education was slightly higher than Group II. Mean IQ scores of children with both parents having more than twelve years education was not computed because only one child was identified in this category. No trend could be identified for Group II, but Group I mean IQ scores were noteworthy. Children of fathers having twelve or more years education had 6.3 points higher mean IQ than children of fathers with less than twelve years education. Additionally, children with mothers having twelve or more years education had 6.6 points higher mean IQ than children of mothers with less than twelve years education.

A comparison of the self-concept congruence mean scores for education of the parents indicated that in both groups, the highest mean self-concept congruence score was 7.4 for children with mothers having twelve or more years education. The lowest mean self-concept congruence score was 4.7 for Group I fathers and mothers having less than twelve years education. The lowest mean self-concept congruence score for Group II was 5 for children of fathers having twelve or more years education.

A comparison of cognitive style mean scores for education of the parents indicated that Group I children of fathers with twelve or more years education were reflective with high errors, while Group II children of fathers with twelve or more years education were impulsive with high errors. Group I children of mothers with twelve or more years education were reflective with high errors, while Group II children of mothers with twelve or more years education were impulsive with high errors. Children from both groups with fathers having less than twelve years education were impulsive with high errors. Children from both groups with mothers having less than twelve years education were reflective with high errors. Group I children with both parents having less than twelve years education were impulsive with high errors, while Group II children with both parents having less than twelve years education were reflective with high errors. Mean cognitive style scores of children with both parents having more than twelve years education were not computed because only one child was identified in this category. It was noteworthy that both groups had high mean error scores regardless of their parents' educational level.

Generally, few trends could be found in the analysis of the demographic data. The trends noted that warranted testing for significance are described below.

Hispanic children had the lowest mean IQ score for both groups. The scores of the Hispanic children were 13.6 mean points below black children and 13.9 mean points below white children for Group I. For Group II, the Hispanic

children were 6.5 mean points below black children and 3.4 mean points below white children.

Considering the difference between the IQ means for race, a Kruskal-Wallis Test was used to test for significance. The null hypothesis was established that there was no difference in the IQ scores between the races identified in the study. Since the calculated H of .9 was less than the critical H of 5.99, there was insufficient evidence to reject the null at the .05 level of significance. Therefore, the alternative hypothesis that there is a difference among the IQ scores of children from different races was not supported by these data. A description of the scores and ranks is shown in Appendix K.

Children in Group I with mothers or fathers having more than twelve years education had higher mean IQ scores than children with mothers or fathers having less than twelve years education. The same trend was not true for Group II. Group I children of fathers with twelve or more years education were 6.3 mean IQ points higher than children of fathers with less than twelve years education. Group I children of mothers with twelve or more years education were 6.6 mean IQ points higher than children of mothers with less than twelve years education.

Considering the difference between the Group I IQ means for parental education, the scores were compared for fathers' educational level and mothers' educational level using the Mann-Whitney U-test. The mothers' and fathers' educational levels were separated because the educational levels were not

consistent between parents and some educational levels were not available. Therefore, two hypotheses were established. The first hypothesis compared the IQ scores of children with fathers having more than twelve years education and fathers having less than twelve years education. The null hypothesis was established that there was no difference in the IQ scores of children with fathers having more than twelve years education and fathers having less than twelve years education. Since the observed U of 17.5 was not greater than or equal to the critical U of 50, there was insufficient evidence to reject the null at the .05 level of significance. Therefore, the alternative hypothesis that children of fathers having more than twelve years education would have higher IQ scores was not supported by these data. A description of the IQ scores and ranks of children with fathers of the different educational levels is shown in Appendix L.

The second hypothesis compared the IQ scores of children with mothers having more than twelve years education and mothers having less than twelve years education. The null hypothesis was established that there was no difference in the IQ scores of children with mothers having more than twelve years education and mothers having less than twelve years education. Since the observed U of 24.5 was not greater than or equal to the critical U of 76, there was insufficient evidence to reject the null at the .05 level of significance. Therefore, the alternative hypothesis that children of mothers having more than twelve years education would have higher IQ scores was not supported by these data.

It appeared that the trend toward higher IQ mean scores for parents with more than twelve years education could not be substantiated statistically. A description of the IQ scores and ranks of children with mothers of the different educational levels is shown in Appendix M.

Regardless of the demographic data compared, all children had or approached high errors for cognitive style. The one low error mean noted was for male children in Group II, which was only 0.2 of a point from being considered high error cognitive style as defined by the median split. The evidence indicated that all children in the demographic groups compared had a high level of errors. However, it was noted that white children in Group II had much higher mean error scores than white children in Group I.

Considering the difference between the cognitive style mean errors, a Mann-Whitney U-test was used to test for significance. The null hypothesis that there was no difference in the cognitive style error scores between white children in Group I and white children in Group II was established. Since the calculated U of 65.6 was greater than the critical U of 54, the null hypothesis was rejected. Therefore, the alternative hypothesis was significant at the .05 level of significance. White children in Group I had significantly fewer errors than white children in Group II. A description of the cognitive style error scores and ranks for white children is shown in Appendix N.

Summary of Data Analysis

The statistical analysis of the data indicated that children who experienced the home-based program had significantly higher IQ scores than children who had not had any similar experience. The results of the statistical analysis of the other personality variables of self-concept and cognitive style indicated there was insufficient evidence to substantiate a difference between the groups. Furthermore, there was no significant correlation between cognitive style latency and error scores for the experimental group or control group as found in the validity and reliability study conducted on the KPISP.[1]

Comparison of the demographic data revealed only one significant finding in cognitive style errors for white children. White children who experienced the home-based developmental program had significantly fewer errors than white children who did not have any similar experience.

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[1]Wright, pp. 8-17.

CHAPTER V

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to identify any significant differences in intelligence, self-concept, and cognitive style of children who had the home-based experience from those children who had not had any similar experience. Two groups of children were tested using measures assessing intellectual development, self-concept, and cognitive style.

Summary of the Findings

The inferences drawn from the data analyzed in Chapter IV indicated that children who had the home-based experience were more intellectually mature as measured by the Stanford-Binet Intelligence Scale. It seemed that children who experienced the home-based program were better prepared intellectually for school. These children were at least able to perform significantly better on a scale of mental ability. However, an item that needs to be discussed was the exceedingly low IQ scores. The IQ scores ranged from 60 to 109 with 42 percent of the scores in the average range of ability, 25 percent in the low-average range of ability, 27 percent borderline defective range of ability, and 6 percent in the mentally defective range of ability. These scores indicated a skewed distribution that was not representative of a normal

population distribution. Various factors may have contributed to such a skewed population. The first and most obvious factor was that the children selected for the study were selected from Title I target areas where the children are considered educationally disadvantaged. Typically, the children selected for this study came from low socioeconomic backgrounds. Additionally, the scores using the 1972 revised IQ tables revealed much lower IQ scores. For example, a CA of 4.0 and an MA of 4.0 were previously converted into an IQ of 100, or average ability. The revised tables gave the same CA and MA an IQ of 88, or low-average ability. The lower scores appear more accurate, considering the more recent population used to norm the Stanford-Binet Intelligence Scale in 1972. However, much research on early intervention programs was completed before the 1972 scales were available. Therefore, one should be cautioned not to compare these scores with scores using the earlier Stanford-Binet tables.

Another factor that may have contributed to the low IQ scores was the cultural background of the children selected for the study. The children identified in this study came from cultural backgrounds and experiences that did not establish familiarity with the testing materials of the type used in a standardized test for measuring intelligence. Finally, it cannot be overlooked that the children came from 33-percent single-parent families. Moreover, the average educational level of the parents was 9.6 years of school, with 75 percent of the parents not completing high school.

Although the children who had the home-based experience had significantly higher IQ scores, the fact that the scores were low indicated that these children lacked some important skills needed to prepare them for school.

Although the children having the home-based experience scored significantly higher on intellectual ability when compared for self-concept using PS-CPT, there were not significant findings. Several factors may have contributed to the nonsignificant findings. In a study of the relationships of preschool, kindergarten, and first grade measures of self-esteem and achievement motivation, it was found that middle and low socioeconomic status children had high self-regard during the preschool years. More variation was not noted until the third grade.[1] It seemed that although a child's self-concept may indeed be forming during the preschool years, the positive or negative attributes may not manifest themselves until late in the early childhood years. Moreover, the positive self experiences that a child has during the home-based experience may not develop to a point where they significantly differ from their peers without a similar experience until later in the early childhood years. The child having the home-based experience may maintain his or her high self-regard and the variation between the groups could be measurable later in the early childhood years. Perhaps a closer look should be taken at what occurs at home or school

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[1]Brent Bridgeman and Virginia C. Shipman, "Preschool Measures of Self-Esteem and Achievement Motivation as Predictors of Third Grade Achievement," Journal of Educational Psychology, no. 1 (1978), p. 25.

that changes a child's self-regard later in the early childhood years.

Another matter that should not be overlooked is the several years of low self-esteem that some children may receive as part of their public school experience. Although the research indicated that self-concept is changed only gradually as opposed to self-esteem, certainly repeated blows to a child's self-esteem will ultimately affect the child's self-concept.[1] In another study examining the relationships between academic achievement and self-concept, it was indicated that self-concept is not invariant and manifests independently of other environmental or psychological factors.[2]

Perhaps a closer look should be taken at the child's social and emotional environment when the child's self-concept becomes most variant. Indications are that there is a self-concept of academic ability. If that self-concept is continually meeting failure, what was previously considered high self-regard could be considerably lowered. Moreover, those children who experience success develop a high self-regard that will continue to enhance their self-concept. If the child's environment reinforces him as a worthy person, he or she will strive to maintain that awareness in spite of periodic failure. Another expert on self-concept and school achievement stated:

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[1]Calhoun and Morse, p. 320.

[2]Rogers, Smith, and Coleman, p. 50.

> If the child sees the educative process as meaningful and self-enhancing, and if the degree of threat provided by the school experience is not overpowering, then he is likely to grow in self-esteem and academic achievement.[1]

Purkey further explained:

> Because the self is not instinctive, but is developed as a process of experience, it is remarkably plastic, changeable, and possesses infinite capacity for growth and actualization.[2]

Therefore, this study was in agreement with the previous research in that there was not a significant difference in the self-concept of preschool children. They all appeared to have a high self-regard during the preschool years. However, it should be noted that although a nonsignificant difference was found in the recent research, this could be the result of the current instruments used to measure self-concept. The reason for the lack of significance between the two groups may be due to the fact that the present instruments used to measure self-concept may not be sensitive to the subtle differences in the self-concept of preschool-age children.

Measuring self-concept in preschool-age children is a relatively new area of investigation. The present instruments have merit, but there is a dearth of information on standardization and norms. Additionally, it cannot be overlooked that the PS-CPT was developed for children from three to seven years of age. Since the average MA of the children selected for the study was four years one month, the ability of the children fell in the lower limits of the age group for which the instrument was designed. It may be possible that the

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[1]Purkey, p. 12. [2]Ibid., p. 30.

children in this study were not mature enough to respond appropriately to a self-report scale of self-concept.

The personality trait of cognitive style was also used to compare the two groups. Again, the results were not significant. Several factors may have contributed to the lack of significant findings. The children who had the home-based experience had significantly higher mental ability because of the intervention of the home-based experience. The cognitive styles, however, may have been a higher level of academic sophistication. In an article designed to identify and remedy certain conceptual and methodological problems in the definition and assessment of reflection-impulsivity, the authors suggested:

> In particular, those children who are developmentally the most mature; who are most thoroughly socialized and acculturated, and whose values are most typical of the majority culture, should be the ones who not only display efficiency and opt for accuracy and precision rather than speed, but those who also show up as relatively reflective for their age. It should not be terribly surprising that they do many other things that are highly valued by the majority culture, perhaps including changing their style or strategy to match the specific demands of the task at hand.[1]

It was certainly obvious that the above description did not fit either of the groups selected for this study. All children identified for participation in the home-based program had few developmental experiences that could be identified with the majority culture. Moreover, the initial screening of these children before enrollment into the program indicated many

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[1]Neil J. Salkind and John C. Wright, "The Development of Reflection-Impulsivity and Cognitive Efficiency," Human Development, no. 20 (1977), p. 386.

developmental deficiencies. Although this would not necessarily lead to the conclusion that these children could not change their cognitive style as a result of participation in the home-based program, it indicated that the significant experiences they had or did not have before enrollment may have more bearing on their cognitive style than could be significantly changed as a result of the home-based intervention. Perhaps the children from both groups had not fully developed some important developmental milestones that could be antecedents to their cognitive style. In a study of how much variance in impulsivity-reflectivity is attributable to the impulsivity-reflectivity trait and how much is due to cognitive development, it was suggested that the differences were primarily developmental differences. It was further stated that children became less impulsive as they matured.[1]

Considering the low mental ages of the children who participated in this study, it may be possible that these children were less variant in their cognitive style because they were immature developmentally. Moreover, it is possible that the children who participated in this study did not differ appreciably in their models of cognitive styles. Surely, the parents of these children had more influence on the child's cognitive style than any outside intervention. This finding may suggest that the disadvantaged child should be identified for intervention at an earlier age. Perhaps efficient problem solving skills are developed at an earlier

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[1]Achenbach and Weisz, p. 414.

age in the experiences derived from infant and toddler exploration and trial and error.

Although individual cognitive styles may not manifest themselves until later in childhood, these early experiences cannot be overlooked in their eventual outcomes. Perhaps it was because of the above factors that the correlation between latency and errors could not be replicated, whereas the author of the KRISP found a significant correlation between the two measures of cognitive style. Furthermore, the use of the median split may adequately separate those children into categories of reflective and impulsive in comparing a sample population, but it does not give any evidence as to how the children in this study compare with children in a more widely normed population. It is possible, using the median split, that a child described as reflective in this study may be considered impulsive in a similar study.

Again, there is a dearth of norming and standardization data on the cognitive style of preschool-age children. However, one difference was found to be significant. An investigation of the demographic data indicated significance in the error scores for white children between the two groups. White children in Group I had significantly fewer errors than white children in Group II. There was no simple explanation for the white children in Group I having significantly fewer errors. Nonetheless, it appeared that those children having the home-based developmental experience learned to scan accurately and discard incorrect solutions to the problems present in the test. Perhaps their home-based experience

provided them with the problem solving skills necessary to be more accurate in their solutions to the problems. Why this same finding was not true for the other cultural groups remains unanswered.

To summarize the findings, it can be stated that the home-based program had the most impact on the children's intelligence scores and error scores on cognitive style. The evidence seemed to indicate that the home-based developmental program did not affect the children's self-concept or cognitive style enough to be significantly different using the instruments available to measure these characteristics.

Conclusions

The findings of this study and the review of the related literature and research indicated that the intervention of a home-based program positively affected the intellectual development of disadvantaged preschool children. However, the evidence concerning the personality traits of self-concept and cognitive style were not conclusive. The following conclusions were drawn from the findings of this study:

1. Children having the home-based developmental experience had significantly higher intelligence scores than the children without a similar experience

2. Children having the home-based developmental experience did not have significantly better self-concept scores than the children without any similar experience

3. Children having the home-based developmental experience were not significantly more reflective in their

cognitive style than the children without any similar experience

4. There was no significant correlation between cognitive style latency and error scores of the children who experienced the home-based developmental program

5. There was no significant correlation between cognitive style latency and error scores of the children who did not experience any program similar to the home-based developmental program

6. Children having the home-based developmental experience did not have significantly more reflectivity time in their cognitive style than the children without any similar experience

7. Children having the home-based developmental experience did not have significantly fewer errors in their cognitive style than the children without any similar experience

8. White children having the home-based developmental experience had significantly fewer errors than white children without any similar developmental experience

Recommendations

The findings and conclusions of this study have indicated the need for further research and studies related to home-based developmental programs and similar services offered to children of disadvantaged families. These recommendations are made in an effort to further the research and planning of early educational programs for disadvantaged children:

1. In consideration of the relatively low IQ scores, it would seem that the children in both groups have lacked some significant developmental experiences before participating in the home-based developmental program. Perhaps the Department of Preschool Education should consider identifying children earlier for participation in a program involving parents and children. This program could develop infants' and toddlers' involvement with parents. The possibility exists that the disadvantaged child is being identified too late in their development.

2. This study indicated that disadvantaged children have a high self-regard during the preschool years. The research of the literature also indicated that variations in self-concept do not develop until the third grade level. It would seem that an investigation of the disadvantaged child's environment at home and in school during the period of time when more variability has been noted in self-concept is warranted.

3. Measuring the self-concept of preschool-age children is a relatively recent method of learning more about the affective differences in young children. Further research needs to be conducted on the present instruments available to test the self-concept of preschool-age children. There is a need for more normative data and standardized tables. Perhaps an instrument could be designed that is sensitive to the more subtle differences in the self-concept of preschool-age children.

4. Perhaps further research could investigate the present curricular efforts now provided in public school education to enhance the child's self-concept during the early childhood years. These questions need to be investigated: Does the disadvantaged child meet with constant failure? Are there curricular efforts to see that the disadvantaged child experiences success? Is the curriculum relevant and meaningful to the needs of the disadvantaged child?

5. Since a search of the literature indicated that cognitive style correlates with a child's development, further study should be conducted to investigate when cognitive style is established. Is cognitive style established for disadvantaged children during the preschool years? Perhaps cognitive style not only correlates with the developmental level of the child, but is itself developmental in that it is a developing process that leads to impulsivity or reflectivity. Further study needs to be conducted on what developmental skills a child must master before cognitive style can be measured.

6. The fact that white children in Group I had significantly fewer cognitive style errors than white children in Group II may be an indication that children coming from different cultural backgrounds have differing benefits from the home-based experience. Further research needs to be conducted in the area of the cognitive style of children having different cultural backgrounds. Three questions need to be investigated: What is the cultural experience of the child

who is reflective or impulsive? Is the cognitive style different for disadvantaged children and children having a more enriched experience? Is the disadvantaged child less likely to change his or her cognitive style as indicated in the search of the literature?

7. Instruments need to be designed to measure a child's cognitive style at an earlier age to further investigate the patterns of problem solving. Three questions need to be investigated: Do toddlers have different styles in their approach to problem solving? Are they thoughtful in solving problems or are they impulsive and easily frustrated? Is the toddler's approach to problem solving a correlate of developmental level?

8. More normative data need to be established and analyzed on cognitive style. As an alternative to the median splits used to determine reflectivity-impulsivity, the scores obtained could be compared to a more widely normed population.

9. A longitudinal study needs to be conducted using the same children selected for this study into the primary grades of their public school education. An investigation of this nature would evaluate any long-term gains that may surface as a result of the home-based experience.

Summary

In conclusion, it appeared that the home-based developmental experience enables children to perform significantly better on a test of intellectual ability. The results on self-concept and cognitive style were not conclusive. It

has been clearly shown by this study and the research of the literature that children who experience the home-based developmental program have more intellectual ability. However, the study has not identified any other personality characteristics that differed significantly.

What the long-term effect of the home-based developmental experience is depends on further research. To the extent that the parents and children continue to use their newly acquired skills, it is hoped that the important intellectual gains indicated by those children experiencing the home-based program will endure and they will be better prepared for their future educational experiences.

APPENDIX A

GROUP I RAW DATA FOR INTELLIGENCE QUOTIENT (IQ), KANSAS REFLECTION-IMPULSIVITY SCALE FOR PRESCHOOLERS (KRISP), AND PRESCHOOL SELF-CONCEPT PICTURE TEST (PS-CPT)

Child	Stanford-Binet			KRISP		PS-CPT
no.	IQ	CA	MA	latency	errors	congruence
1	75	3-11	3-5	29.2	11	9
2	90	4-1	4-2	34.4	5	1
3	92	3-8	3-10	73.5	17	4
4	76	4-5	3-10	29.0	13	8
5	77	3-11	3-6	31.2	10	3
6	83	3-9	3-7	33.0	20	5
7	78	4-5	3-11	44.0	10	10
8	102	4-0	4-7	69.0	4	7
9	94	4-2	4-5	68.0	10	10
10	98	4-4	4-9	38.5	3	5
11	96	3-11	3-10	35.8	6	5
12	95	4-6	4-9	49.5	16	6
13	75	4-3	3-8	51.5	10	7
14	74	4-6	3-10	38.7	9	2
15	92	4-6	4-8	29.5	11	0
16	91	4-5	4-6	21.5	18	3
17	90	3-10	3-11	45.1	10	3
18	82	4-0	3-9	52.0	25	9
19	93	3-11	4-2	29.0	10	1
20	109	3-9	4-2	56.5	4	10
21	68	4-6	3-7	50.0	19	4
22	85	4-6	4-4	29.0	10	9
23	100	4-1	4-7	40.0	9	6
24	104	4-5	5-1	29.0	10	8
25	98	4-0	4-5	43.4	8	10
26	94	4-0	4-3	38.6	12	1

APPENDIX B

GROUP II RAW DATA FOR INTELLIGENCE QUOTIENT (IQ), KANSAS REFLECTION-IMPULSIVITY SCALE FOR PRESCHOOLERS (KRISP), AND PRESCHOOL SELF-CONCEPT PICTURE TEST (PS-CPT)

Child no.	Stanford-Binet IQ	CA	MA	KRISP latency	errors	PS-CPT congruence
1	89	4-3	4-3	51.6	20	10
2	95	4-8	4-11	35.0	8	8
3	80	4-7	4-0	31.0	16	4
4	89	4-2	4-1	34.5	9	1
5	81	4-3	3-11	44.0	14	6
6	99	4-2	4-7	41.5	5	1
7	86	4-8	4-6	19.0	16	5
8	72	4-5	3-7	75.5	13	4
9	87	4-4	3-10	37.6	12	3
10	91	5-1	4-8	37.9	11	10
11	80	4-5	4-0	34.5	3	3
12	74	5-0	4-3	57.0	4	5
13	77	4-3	3-9	63.1	13	10
14	102	3-8	3-10	72.8	10	10
15	77	3-11	3-6	49.5	15	3
16	83	4-3	4-0	51.0	12	10
17	68	4-6	3-7	34.0	12	5
18	73	5-0	4-2	58.5	6	6
19	87	4-2	4-1	36.0	17	9
20	102	4-5	5-0	44.5	3	4
21	71	4-7	3-9	24.0	12	10
22	80	3-11	3-7	80.0	27	2
23	78	4-7	4-1	27.5	13	4
24	74	5-3	4-5	31.0	9	5
25	92	4-0	4-2	29.0	10	5
26	60	4-4	3-1	37.0	17	3

APPENDIX C

IQ SCORES AND RANKS

Group One Score	Rank	Group Two Score	Rank
68	2.5	60	1
74	8	68	2.5
75	10.5	71	4
75	10.5	72	5
76	12	73	6
77	14	74	8
78	16.5	74	8
82	22	77	14
83	23.5	77	14
85	25	78	16.5
90	31.5	80	19
90	31.5	80	19
91	33.5	80	19
92	36	81	21
92	36	83	23.5
93	38	86	26
94	39.5	87	27.5
94	39.5	87	27.5
95	41.5	89	29.5
96	43	89	29.5
98	44.5	91	33.5
98	44.5	92	36
100	47	95	41.5
102	49	99	46
104	51	102	49
109	52	102	49

$N_1=26$ $T_1=802.5$ $N_2=26$ $T_2=575.5$

APPENDIX D

SELF-CONCEPT CONGRUENCE SCORES AND RANKS

Group One		Group Two	
Score	Rank	Score	Rank
0	1	1	4
1	4	1	4
1	4	2	7.5
1	4	3	12
2	7.5	3	12
3	12	3	12
3	12	3	12
3	12	4	18.5
4	18.5	4	18.5
4	18.5	4	18.5
5	25.5	4	18.5
5	25.5	5	25.5
5	25.5	5	25.5
6	31.5	5	25.5
6	31.5	5	25.5
7	34.5	5	25.5
7	34.5	6	31.5
8	37	6	31.5
8	37	8	37
9	40.5	9	40.5
9	40.5	10	47.5
9	40.5	10	47.5
10	47.5	10	47.5
10	47.5	10	47.5
10	47.5	10	47.5
10	47.5	10	47.5
N_1=26	T_1=687.5	N_1=26	T_2=690.5

APPENDIX E

COGNITIVE STYLE MEDIAN SPLIT

Group Number	Latency	Group Number	Errors
2	19	1	3
1	21.5	2	3
2	24	2	3
2	27.5	1	4
1	29	2	4
1	29	1	4
1	29	1	5
1	29	2	5
2	29	1	6
1	29.2	2	6
1	29.5	1	8
2	31	2	8
2	31	1	9
1	31.2	1	9
1	33	2	9
2	34	2	9
1	34.4	1	10
2	34.5	1	10
2	34.5	1	10
2	35	1	10
1	35.8	1	10
2	36	1	10
2	37	1	10
2	37.6	1	10
2	37.9	2	10
1	38.5	2	10
1	38.6	1	11
1	38.7	1	11
1	40	2	11
2	41.5	1	12
1	43.4	2	12
1	44	2	12
2	44	2	12
2	44.5	2	12
1	45.1	1	13
1	49.5	2	13
2	49.5	2	13
1	50	2	13
2	51	2	14
1	51.5	2	15
2	51.6	1	16
1	52	2	16
1	56.5	2	16
2	57	1	17
2	58.5	2	17
2	63.1	2	17
1	68	1	18
1	69	1	19
2	72.8	1	20
1	73.5	2	20
2	75.5	1	25
2	80	2	27

APPENDIX F

COGNITIVE STYLE CATEGORIES

Categories	Group One	Group Two
I-HE	5	9
I-LE	7	5
R-HE	5	7
R-LE	9	5

APPENDIX G

COGNITIVE STYLE LATENCY, ERRORS, AND RANKS FOR GROUP I

Latency		Accuracy		Difference	
Time	Rank	Errors	Rank	d_i	d_i^2
29.2	6	11	17.5	-11.5	132.25
34.4	10	5	4	6	36
73.5	26	17	22	4	16
29.0	3.5	13	20	-16.5	272.25
31.2	8	10	12.5	- 4.5	20.25
33.0	9	20	25	-16	256
44.0	17	10	12.5	4.5	20.25
69.0	25	4	2.5	22.5	506.25
68.0	24	10	12.5	11.5	132.25
38.5	12	3	1	11	121
35.8	11	6	5	6	36
49.5	19	16	21	- 2	4
51.5	21	10	12.5	8.5	72.25
38.7	14	9	7.5	6.5	42.25
29.5	7	11	17.5	-10.5	110.25
21.5	1	18	23	-22	484
45.1	18	10	12.5	5.5	30.25
52.0	22	25	26	- 4	16
29.0	3.5	10	12.5	- 9	81
56.5	23	4	2.5	20.5	420.25
50.0	20	19	24	- 4	16
29.0	3.5	10	12.5	- 9	81
40.0	15	9	7.5	7.5	56.25
29.0	3.5	10	12.5	- 9	81
43.4	16	8	6	10	100
36.8	13	12	19	- 6	36

$\Sigma d_i = 0 \quad \Sigma d_i^2 = 3179$

APPENDIX H

COGNITIVE STYLE LATENCY, ERRORS, AND RANKS FOR GROUP II

Latency		Accuracy		Difference	
Time	Rank	Errors	Rank	d_i	d_i^2
51.6	20	20	25	- 5	25
35.0	10	8	6	4	16
31.0	5.5	16	21.5	-16	256
34.5	8.5	9	7.5	1	1
44.0	16	14	19	- 3	9
41.5	15	5	4	11	121
19.0	1	16	21.5	-20.5	420.25
75.5	25	13	17	8	64
37.6	13	12	13.5	- .5	.25
37.9	14	11	11	3	9
34.5	8.5	3	1.5	7	49
57.0	21	4	3	18	324
63.1	23	13	17	6	36
72.8	24	10	9.5	14.5	210.25
49.5	18	15	20	- 2	4
51.0	19	12	13.5	5.5	30.25
34.0	7	12	13.5	- 6.5	42.25
58.5	22	6	5	17	289
36.0	11	17	23.5	-12.5	156.25
44.5	17	3	1.5	15.5	240.25
24.0	2	12	13.5	-11.5	132.25
80.0	26	27	26	0	0
27.5	3	13	17	-14	196
31.0	5.5	9	7.5	- 2	4
29.0	4	10	9.5	- 5.5	30.25
37.0	12	17	23.5	-11.5	132.25

$\Sigma d_i = 0$ $\Sigma d_i^2 = 2797.5$

APPENDIX I

COGNITIVE STYLE LATENCY AND RANKS

Group One		Group Two	
Latency	Rank	Latency	Rank
29.2	10	51.6	41
34.4	17	35.0	20
73.5	50	31.0	12.5
29.0	7	34.5	18.5
31.2	14	44.0	32.5
33.0	15	41.5	30
44.0	32.5	19.0	1
69.0	48	75.5	51
68.0	47	37.6	24
38.5	26	37.9	25
35.8	21	34.5	18.5
49.5	36.5	57.0	44
51.5	40	63.1	46
38.7	28	72.8	49
29.5	11	49.5	36.5
21.5	2	51.0	39
45.1	35	34.0	16
52.0	42	58.5	45
29.0	7	36.0	22
56.5	43	44.5	34
50.0	38	24.0	3
29.0	7	80.0	52
40.0	29	27.5	4
29.0	7	31.0	12.5
43.4	31	29.0	7
38.6	27	37.0	23
N_1=26	T_1=671	N_2=26	T_2=707

APPENDIX J

COGNITIVE STYLE ERRORS AND RANKS

Group One		Group Two	
Errors	Rank	Errors	Rank
11	28	20	49.5
5	7.5	8	11.5
17	45	16	42
13	36.5	9	14.5
10	21.5	14	39
20	49.5	5	7.5
10	21.5	16	42
4	5	13	36.5
10	21.5	12	32
3	2	11	28
6	9.5	3	2
16	42	4	5
10	21.5	13	36.5
9	14.5	10	21.5
11	28	15	40
18	47	12	32
10	21.5	12	32
25	51	6	9.5
10	21.5	17	45
4	5	3	2
19	48	12	32
10	21.5	27	52
9	14.5	13	36.5
10	21.5	9	14.5
8	11.5	10	21.5
12	32	17	45
N_1=26	T_1=648.5	N_2=26	T_2=729.5

APPENDIX K

COMPARISON OF IQ SCORES FOR RACE

Group One - Black		Group Two - Hispanic		Group Three - White	
Score	Rank	Score	Rank	Score	Rank
74	8	68	2.5	60	1
77	14	68	2.5	72	5
80	18	71	4	74	8
80	18	73	6	80	18
86	25	74	8	81	20
89	28.5	75	10.5	87	26.5
92	35	75	10.5	87	26.5
93	37	76	12	90	30.5
95	40.5	77	14	91	32.5
98	43.5	77	14	92	35
99	45	78	15.5	94	38.5
100	46	78	15.5	95	40.5
102	48	82	21	96	42
		83	22.5	98	43.5
		83	22.5	102	48
		85	24	104	50
		89	28.5	109	51
		90	30.5		
		91	32.5		
		92	35		
		94	38.5		
		102	48		
N_1=13	T_1=406.5	N_2=22	T_2=438	N_3=17	T_3=516.5

APPENDIX L

IQ SCORES AND RANKS OF CHILDREN OF FATHERS WITH DIFFERENT EDUCATIONAL LEVELS

Education $\geq$ 12		Education $<$ 12	
Score	Rank	Score	Rank
90	7.5	74	1
93	12	75	2
94	13	76	3
95	14	82	4
98	16	83	5
		85	6
		90	7.5
		91	9
		92	10.5
		92	10.5
		96	15
		100	17
		104	18
$N_1 = 5$	$T_1 = 62.5$	$N_2 = 13$	$T_2 = 108.5$

APPENDIX M

IQ SCORES AND RANKS OF CHILDREN OF MOTHERS WITH DIFFERENT EDUCATIONAL LEVELS

Education $\geq$ 12		Education $<$ 12	
Score	Rank	Score	Rank
82	6	74	1
94	15	75	2.5
98	18.5	75	2.5
100	20	76	4
102	21	77	5
		83	7
		85	8
		90	9.5
		90	9.5
		91	11
		92	12.5
		92	12.5
		93	14
		95	16
		96	17
		98	18.5
		104	22
		109	23
$N_1 = 5$	$T_1 = 80.5$	$N_2 = 18$	$T_2 = 195.5$

APPENDIX N

COGNITIVE STYLE ERROR SCORES AND RANKS FOR WHITE CHILDREN

Group One		Group Two	
Score	Rank	Score	Rank
4	1.5	8	5.5
4	1.5	10	8.5
5	3	11	10
6	4	12	11.5
8	5.5	13	13
9	7	14	14
10	8.5	17	15.5
12	11.5	17	15.5
		27	17
$N_1 = 8$	$T_1 = 42.5$	$N_2 = 9$	$T_2 = 110.5$

APPENDIX O

SCHOOL DISTRICT OF LANCASTER
225 WEST ORANGE STREET
LANCASTER, PENNSYLVANIA 17604

PRESCHOOL SERVICES

Dear Parent:

This year the Department of Preschool Services will be doing a study to gain more information about the children who participate in our programs. The study will require that your child be given some school type tests. The results of these tests will have nothing to do with your child's school records or future placement. Your child's name will remain annonymous and the results will be strictly for my personal use in research.

I would like to have your assistance in carrying out this project. In order for your child to participate in the study I will need your permission by signing the attached sheet. You can be assured that your child's name will not be used as part of the study. The results will be used to make general statements about a group of children.

Thank you for your consideration. If you have any questions I can be contacted at 291-6201.

Sincerely,

William N. Kiefer
Coordinator, Preschool Services

WNK/mb
9/7/79

SCHOOL DISTRICT OF LANCASTER
225 WEST ORANGE STREET
LANCASTER, PENNSYLVANIA 17604

PRESCHOOL SERVICES

I agree to have my child participate in a research study conducted by William N. Kiefer, Coordinator of Preschool Services.

Child's Name (Please Print)

Parent or Guardian Signature

SCHOOL DISTRICT OF LANCASTER
225 WEST ORANGE STREET
LANCASTER, PENNSYLVANIA 17604

SERVICIOS PRE-ESCOLARES

Estimado Pariente:

Este año el Departamento de Servicios Pre-Escolar hara un estudio para obtener mas información de los niños que participan en nuestros Programas.

El estudio requiere que se le dé algunos examenes tipo escolar a ellos.

Los resultados de estos examenes no tienen que ver con los record o puesto futuro de su niño (a).

El nombre de su niño (a) se mantendra anónimo y los resultados seran estrictamente para mi estudio personal.

Deseo su asistenciá en hacer este projecto. En orden de que su niño (a) participe en este estudio nesecito su permiso. Favor de firmar el papel atado. Puede estar asegurado que el nombre de su niño (a) no se usará como parte de este estudio. Los resultados seran usado para hacer resumenes generales de un grupo de niños.

Muchas gracias por su consideración. Si tiene alguna Pregunta Puede llamar 291-6201.

Sinceramente,

William N. Kiefer

William N. Kiefer
Presidente, Servicios Pre-Escolares

WNK/mb
9/12/79

"Equal Education Opportunities"

SCHOOL DISTRICT OF LANCASTER
225 WEST ORANGE STREET
LANCASTER, PENNSYLVANIA 17604

SERVICIOS PRE- ESCOLAR

Yo estoy de acuerdo que mi nino (a) participe en el estudio conducido por William N. Kiefer, Presidente de Servicios Pre-Escolar.

Nombre de Nino (a)
(Use letras separadas)

Firma
Pariente or guardian

"Equal Education Opportunities"

GLOSSARY

Cognitive Style: The reflective or impulsive quality as measured by the Matching Familiar Figures Test (MFF)

Disadvantaged Children: Those children coming from target area neighborhoods as defined by ESEA Title I Guidelines

Early Intervention: A program designed to prepare children between birth and the fourth year for future educational experiences

Home-Based Program: An educational program that takes place in the home; for this study, the children having this experience will be in their third year

Intelligence: A child's cognitive ability for school experiences as measured by the Stanford-Binet Intelligence Scale

Preschool Education: Education that takes place before the child reaches first grade

Self-Concept: The amount of agreement a child has between his self and ideal self as measured by the Preschool Self-Concept Picture Test (PS-CPT)

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VITA

William N. Kiefer was born November 6, 1943, in Lancaster, Pennsylvania. He attended Millersville State College from 1964 to 1966. After three years service in the United States Army, he returned to Millersville State College where he was a Dean's List student for each semester until he graduated in 1972 with a B.A. in Psychology and a teacher's certificate in Industrial Arts Education.

From 1972 to 1974, he was a graduate student in the School of Psychology at Millersville State College. His internship was served with the School District of Lancaster, and he graduated in 1974 with an M.S. in School Psychology and received state certification that same year. Upon graduation, he accepted the position of school psychologist for the School District of Lancaster Preschool Program.

In 1976, Kiefer accepted the position of Coordinator of Preschool Services. That same year, he was the psychological consultant for a book entitled Parenting Skills: The Preschool Years, funded by the Bureau of Vocational Education, Pennsylvania Department of Education. Kiefer has made numerous presentations at state conferences for adult and parenting education.